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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/564,608

07/13/2006

Ian Hall

207,419

8874

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EXAMINER

BASINGER, SHERMAN D

ART UNIT

PAPER NUMBER

3617

MAIL DATE

DELIVERY MODE

03/26/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/564,608	Applicant(s) HALL ET AL.	
	Examiner SHERMAN D. BASINGER	Art Unit 3617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 February 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-13 and 16-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Conway in view of Wasenius.

The vessel with the plurality of separate liquid cargo tanks is shown in figure 1 of Conway. That the tanks 2 are located below the deck plate 13 is shown in figure 1 of Conway.

Conway does not disclose tanks having a generally highest point above the baseline of the ship. In figure 8, Wasenius discloses middle tanks having a highest point above the baseline of the ship. It would have been obvious to modify the deck plate of Conway such that the middle tanks 14 have a highest point above the baseline of the ship similar to what is shown in figure 8 of Wasenius. Motivation to make such a change is to put a slope on the deck plate so that water will run off of the deck plate.

Conway discloses an aperture in figure 2 with an expansion truck 15 positioned thereover; however, this aperture is not a plurality of apertures nor is it positioned substantially as close to the highest point of the tank above the baseline of the ship.

Further, in Conway the trunks 15 are secured in a fluid tight relation with said deck plate and surrounding said aperture in said deck plate above each tank to prevent leakage there between, to thereby form an exclusive expansion space to serve the liquid cargo in the respective tank there below, said expansion trunk being in fluid communication with

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pipelines 16 only for the venting of the tank, said at least one trunk not being associated with any pipelines to receive fluids from said tank.

Note in Wasenius the plurality of apertures beneath trunk 10 and note that trunk 10 in figure 8 and its related apertures are positioned as close to the highest point of the middle tanks above the baseline of the ship. It would further have been obvious to make the aperture beneath the trunks 15 of Conway a plurality of apertures and to position the middle tank trunks as close to the highest point of the middle tanks with respect to the baseline of the ship in view of the teaching of Wasenius. The use of a plurality of apertures would somewhat control the flow of gas into and out of the trunk while preventing sloshing of oil into the trunk. Further locating the trunk at the highest point of the middle tank would allow all the gas in the tank to enter the trunk 15 of Conway.

Conway does not disclose that each expansion trunk is located as far forward as possible; however, Wasenius in figure 2 teaches this concept. Motivation to locate the trunk at such a location is to have support for it provided by the forward bulkhead of the tank.

The combination of Conway and Wasenius does not disclose that the slots have a sufficient area such that there is approximately less than a 0.5 pound per square inch pressure difference between the opposing tank side and trunk side of the deck plates when the tank is being loaded at 200% of its maximum load, that the slots are between 2 and 3 centimeters wide and one half of the length of a deck plate, that the trunk 10 has an interior volume of at least 2% of the volume of the respective tank there below for liquid cargo storage, that the apertures are located as far aft on the tank as is possible, that the trunk has dimensions of between about 10 and 40 meters in length, about 5 and 15 meters in width and about 2 and 3 meters height, that the trunk encloses a volume at least that required for compliance with maritime regulations for an expansion space for liquid cargo storage, that the expansion space of each trunk for fluid cargo storage is at least about 2% of the amount of under deck space for use as fluid cargo storage, and that the slots are at least one half the length of the deck plate.

However, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains to modify the trunks and apertures or slots of the combination of Conway and Wasenius such that the slots have a sufficient area such that there is approximately less than a 0.5 pound per square inch pressure difference between the opposing tank side and trunk side of the deck plates when the tank is being loaded at 200% of its maximum load, that the slots are

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between 2 and 3 centimeters wide and one half of the length of a deck plate, that the trunk 10 has an interior volume of at least 2% of the volume of the respective tank there below for liquid cargo storage, that the apertures are located as far aft on the tank as is possible, that the trunk has dimensions of between about 10 and 40 meters in length, about 5 and 15 meters in width and about 2 and 3 meters height, that the trunk encloses a volume at least that required for compliance with maritime regulations for an expansion space for liquid cargo storage, that the expansion space of each trunk for fluid cargo storage is at least about 2% of the amount of under deck space for use as fluid cargo storage, and that the slots are at least one half the length of the deck plate. Motivation to make these modifications are found in the fact that the apertures and trunk are going to be made a dimension and volume to meet any requirements specified by a governing body so that the vessel can be used for what it is intended.

With regard to claim 20, the alternative vent line will be line 21 of Conway.

With regard to claim 26, the at least two separate expansion trunks positioned on the deck plate and over the apertures will be the trunks for adjacent middle tanks 14. The trunks would be in communication with each other through pipe 18 of Conway. This pipe 18 is not disclosed as being located at the highest point of the respective tank. However, to locate this tank at the highest point of the respective tank would have been obvious in order to place the pipe close to the trunks 15 for the modified middle tanks.

3. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Conway and Wasenius as combined for claim 1 and further in view of Butterworth. Conway does not disclose that trunk 15 includes a crude oil washing pipeline and is configured for being connected with one or more removable crude oil washing machines or a permanently installed crude oil pipeline washing machine. Butterworth discloses that trunk 5 includes crude oil washing pipeline 12 and that the trunk 5 is configured for being connected with removable crude oil washing machine 7. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains to modify trunk 15 of Conway such that it includes a crude oil washing pipeline similar to 12 of Butterworth and is configured for being connected with one or more removable crude oil washing machines similar to 7 of Butterworth or a permanently installed crude oil pipeline washing machine. Motivation to do so is to provide means to clean and scale the tanks 14 of Conway. With regard to claim 15, see the trunks 15 shown in figure 2 of Conway.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 4, said slots has not clear antecedent.

Response to Arguments

6. Applicant's arguments with respect to claims 1-26 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to SHERMAN D. BASINGER whose telephone number is (571)272-6679. The examiner can normally be reached on Monday-Thursday 5:30 a.m.-3:00 p.m. and Friday 6:30 a.m.-10:30 a.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Samuel J. Morano can be reached on 571-272-6684. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sherman D. Basinger/
Primary Examiner
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3/27/08